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Resurgent Bacterial Sexually Transmitted Disease Among Men Who Have Sex With Men — King County, Washington, 1997–1999

During the late 1980s and early 1990s, King County, Washington (1998 population: 1.6 million), experienced a substantial epidemic of infectious syphilis (i.e., primary, secondary, and early latent). Subsequently, reported cases of infectious syphilis declined to six cases in 1995 and one in 1996; five of the 1995 cases and the case in 1996 were believed to have been acquired outside King County. However, in 1997, sustained spread of syphilis was reestablished in King County (*1*). To determine whether this reemergence was associated with changes in the epidemiology of other sexually transmitted diseases (STDs), Public Health–Seattle and King County (PHSKC) analyzed notifiable STD data for 1997–1999. This report summarizes the results of this analysis, which indicate that infectious syphilis among men who have sex with men (MSM) in King County increased to 46 cases during January–June 1999, and chlamydia and gonorrhea also increased among MSM attending public health clinics.

For this report, PHSKC analyzed surveillance data on infectious syphilis, chlamydia, and gonorrhea reported to PHSKC from health-care providers and laboratories. Data included disease, sex, stage of disease, racial/ethnic group, age, and in some cases sexual orientation and anatomic site of infection. Persons with these diseases were interviewed by PHSKC staff for partner management. Data collected included number and sex of sex partners, sexual orientation, and other risk factors.

Syphilis cases increased steadily from late 1997 to mid-1998, appeared to stabilize in the second half of 1998, then increased during January–June 1999 (Figure 1). The proportion of cases in MSM increased from 21% (four of 19) in 1997 to 85% (75 of 88) in 1998 and 1999 ($p<0.01$). Among 79 MSM, the median age was 35 years (range: 19–56 years) and 70% were aged >30 years. Primary, secondary, and early latent infection accounted for 23%, 61%, and 16% of cases in MSM, respectively; these proportions did not differ significantly from 1997 to 1999. Among the 79 MSM with early latent syphilis in 1997 through June 1999, 48 (72%) of 67 had human immunodeficiency virus (HIV) infection and two others were HIV seropositive near the time syphilis was diagnosed.

From 1997 through June 1999, laboratory-confirmed infections with *Neisseria gonorrhoeae* and *Chlamydia trachomatis* among MSM attending the PHSKC STD clinic also increased (Figure 2). In addition, cases of rectal gonococcal infection in

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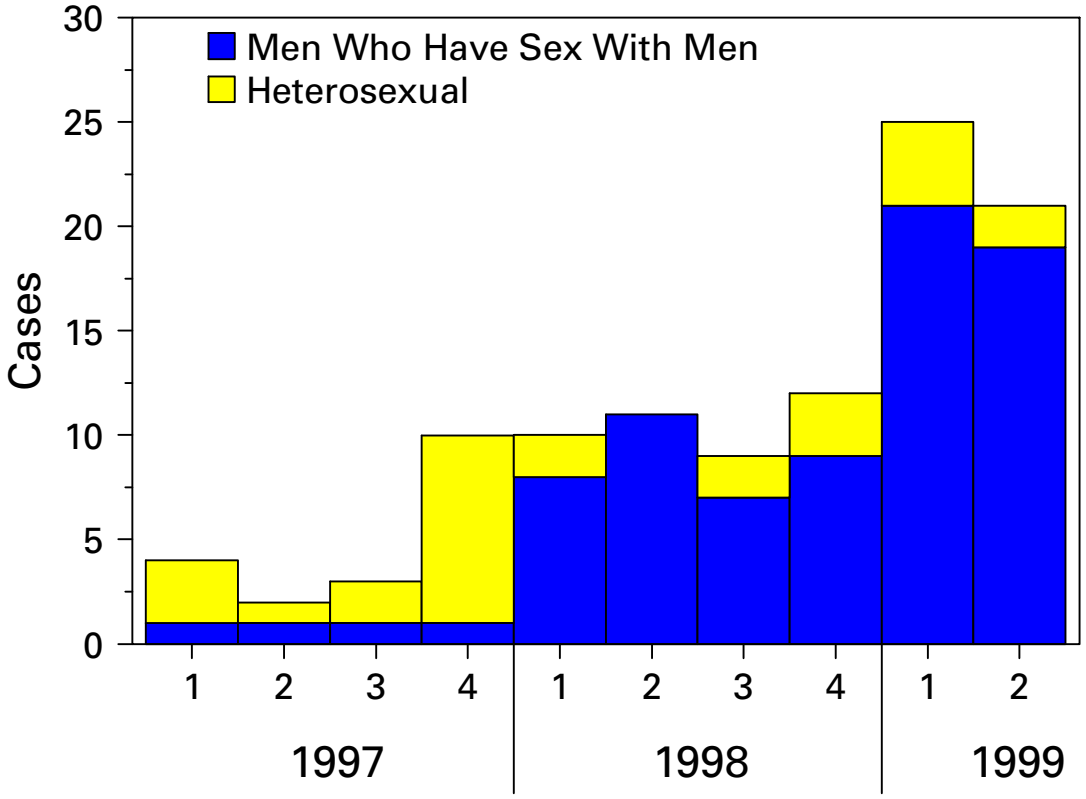
FIGURE 1. Reported cases of infectious (i.e., primary, secondary, and early latent) syphilis, by quarter and sexual orientation of infected persons — King County, Washington, 1997–1999



males reported by providers outside the STD clinic increased from six cases in 1997 to 25 cases in 1998 and 13 cases during January–June 1999. The median age of the 427 MSM who received a diagnosis of gonorrhea or chlamydial infection in the STD clinic from 1997 through June 1999 was 32 years (range: 20–53 years), and 17% with chlamydial infection and 19% with gonorrhea were known to be infected with HIV; this proportion did not vary significantly through the period of analysis.

Data on sex partners were provided by 63 (80%) of the 79 MSM with infectious syphilis from 1997 through June 1999. During the interval when syphilis was likely to have been acquired or transmitted (mean: 6 months), these men reported 740 sex partners, of whom 653 (88%) were met at anonymous venues such as bath houses, bars, or clubs; 50 (79%) of 63 men had had at least one anonymous partner (median: three partners; range: one to 100). MSM with gonorrhea or chlamydial infection reported a mean of 3.5 sex partners during the 2 months before treatment, and approximately 20% apparently acquired infection from anonymous partners.

Based on an estimate of PHSKC that 40,000 MSM reside in King County, the annual rate of infectious syphilis per 100,000 MSM increased from zero in 1996 to approximately 10 in 1997 and 90 in 1998, and the projected annual incidence in 1999 is 200 cases per 100,000. An estimated 10% of MSM in King County are infected with HIV (PHSKC, unpublished data, 1999). If 4000 HIV-infected MSM reside in King County, the projected annual incidence of infectious syphilis in the HIV-infected MSM

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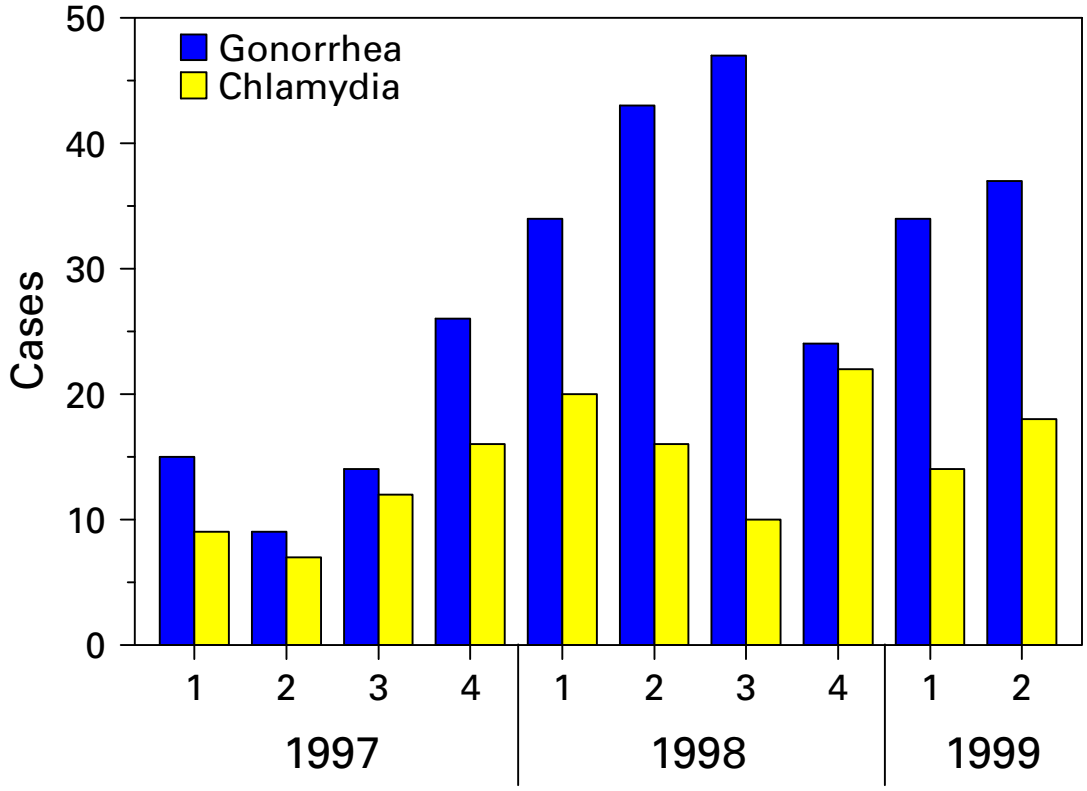
FIGURE 2. Reported cases of laboratory-confirmed gonorrhea and chlamydial infection among men who have sex with men attending a Public Health Seattle and King County STD clinic, by quarter — King County, Washington, 1997–1999



population in 1999 is approximately 1500 per 100,000. The minimum incidence of gonorrhea in MSM, based on the number of cases diagnosed in the PHSKC STD clinic plus rectal infections in males diagnosed elsewhere (data on sexual orientation are not available outside the STD clinic), increased from 180 per 100,000 MSM in 1997 to 430 and 420 in 1998 and 1999, respectively. In comparison, the reported rate of gonorrhea in presumptively heterosexual persons in King County was 50 per 100,000 in 1997 and 1998.

PHSKC has used outreach activities, targeted publications in the local gay press, and community forums to encourage MSM to follow safer sex practices and to be screened for STDs. STD and HIV testing and counseling are being offered at bath houses and other venues, screening has been expanded among MSM attending public clinics, and King County health-care providers have been encouraged to expand STD screening among at-risk MSM.

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Editorial Note: The incidence of STDs among MSM declined substantially during the early 1980s as a result of a decrease in sexual risk behavior (*2,3*). However, high-risk behaviors and STDs among MSM have increased in some cities (*4,5*). In Washington, the proportion of cases of primary and secondary syphilis among MSM declined from

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81% in 1973 to 8% in 1988 (*3*). The findings in this report indicate that syphilis transmission in King County is occurring predominantly among MSM. When STDs are introduced into a community, the size of the subsequent outbreak depends on the sexual mixing patterns of the community, the numbers of sex partners, concurrency of sexual partnerships, condom use, and the frequency of partner change (*3,6*). In King County, syphilis, gonorrhea, and chlamydia apparently have been introduced into a population of MSM who have large numbers of anonymous partners, which can result in rapid and extensive transmission of STDs (*7*). In addition to this outbreak, recent reports have suggested increases in gonococcal infection in several western states and in the frequency of unprotected anal sex among MSM (*4,5*). Some MSM may be recruiting sex partners in anonymous venues more often now than in the recent past (*8*).

The high proportion of persons with syphilis, gonorrhea, and chlamydial infection who also were infected with HIV is of particular concern. Persons with STDs, including genital ulcer disease and nonulcerative STD, have a twofold to fivefold increased risk for HIV infection (*9,10*). Control of STDs is a central component of HIV infection prevention efforts in the United States (*10*); resurgence of bacterial STD threatens national HIV infection prevention efforts.

Reasons for the increasing rates of bacterial STD in MSM in King County are unknown but may include an increased frequency of unprotected sex among some MSM. Anecdotal reports by MSM with bacterial STDs suggest that such behaviors are linked to sex with anonymous partners in bath houses, which may be related to improvements in the treatment of HIV infection or to changing patterns of recreational drug use. The age distribution of syphilis cases suggests that in King County, relapse in sexual safety among older MSM is a more important determinant than failure of young, newly sexually active MSM to adopt safer sex practices.

The findings in this report are subject to at least three limitations. First, reporting of STDs is incomplete, which could result in an underestimate of the incidence of disease in this population. Second, MSM attending STD clinics probably are not representative of all MSM at risk. Finally, some persons may not have given accurate responses when asked about sexual relationships, HIV serostatus, or high-risk behaviors.

PHSKC has employed several control measures to contain these outbreaks. Although partner notification is effective for the known partners of persons with syphilis and gonorrhea, its ability to reach exposed persons is greatly limited in situations such as the syphilis outbreak in King County, where 88% of partners were met at venues where anonymous sex is common. The high frequency of anonymous sex strongly suggests that sex partner management services for identifiable partners alone would be insufficient to control the outbreak. Print media, public service announcements, outreach, and expanded screening have been used in this outbreak to augment traditional partner management services. These interventions may have encouraged timely symptom recognition and health-seeking behavior by infected men. Among men with syphilis, 72% knew they were HIV positive and many were receiving health care for the disease, indicating that enhanced STD prevention efforts may be needed for HIV-infected MSM in health-care settings and other venues. This outbreak demonstrates the need to sustain surveillance for STDs even after rates have decreased in a community.

Bacterial Sexually Transmitted Disease — Continued

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Inadvertent Use of Bicillin® C-R for Treatment of Syphilis — Maryland, 1998

In October 1998, the Maryland Department of Health and Mental Hygiene (MDH) was notified that a public sexually transmitted disease (STD) clinic in a county (county A) had used a nonrecommended preparation to treat syphilis patients during January–October 1998. The clinic had been inadequately treating syphilis patients or syphilis contacts with Bicillin®* C-R (a mixture of 1.2 million units [MU] benzathine penicillin G [BPG] and 1.2 MU procaine penicillin G), rather than with Bicillin® L-A (2.4 MU BPG). Compared with short-acting procaine penicillin G, BPG has a longer half-life considered essential for effective syphilis treatment because it yields sustained spirochetecidal levels needed to treat the slowly reproducing agent of syphilis, *Treponema pallidum*. The inadvertent use of Bicillin C-R, which contains only half the recommended dose of BPG for syphilis, was recognized by a health-care provider at the STD clinic in a neighboring county (county B) approximately 1 month after county B had borrowed BPG from county A. This report summarizes the investigation of the use of Bicillin C-R to treat STD patients in county A and discusses the frequency of Bicillin C-R use in STD clinics nationwide. Findings of this investigation indicate that inadvertent Bicillin C-R use is more frequent than previously known and that preventive measures should be taken to minimize such use.

Three BPG-containing products are marketed by Wyeth-Ayerst Laboratories (Philadelphia, Pennsylvania): Bicillin L-A, Bicillin C-R, and Bicillin® C-R 900/300 (a mixture of 0.9 MU BPG and 0.3 MU procaine penicillin G). Besides having similar proprietary names, the package and label for Bicillin C-R and Bicillin L-A have similar lettering and colors. Bicillin L-A is recommended for treating syphilis patients and upper respiratory tract infections caused by susceptible streptococci (*1*). The efficacy of Bicillin C-R to

*Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC or the U.S. Department of Health and Human Services.